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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,791	08/04/2003	Sciya Yamada	241206US3X	5560

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EXAMINER

VANOY, TIMOTHY C

ART UNIT PAPER NUMBER

1754

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/632,791	<b>Applicant(s)</b> YAMADA ET AL.	
	<b>Examiner</b> Timothy C. Vanoy	<b>Art Unit</b> 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/24/2005</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Drawings*

- a) The drawing is objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "B" has been used to designate *both* the mixture of hulls and the spent nuclear fuels (please see the sentence bridging pgs. 5 and 6 in the applicants' specification) *as well as* the feature located between feature 11 and feature 8 illustrated in the applicants' figure.
- b) The drawing is objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the introduction of atmospheric air or the one including a slight amount of argon gas set forth in applicants' claim 8 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
- c) The drawing is objected to because it unnecessarily compresses 6 subfigures into a single figure which makes for a confusing presentation. It is suggested to delete the "(a)", "(b)", "(c)", "(d)", "(e)" and "(f)" from the figure and to make the appropriate amendments to the specification.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

Art Unit: 1754

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 4, 8 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claims 3 and 4 do not particularly point out and distinctly set forth what the percentage content of aluminum is suppressed in. The claim language raises the question: what is it that is having its aluminum content suppressed?

b) The term "slight" in claim 8 is a relative term which renders the claim indefinite. The term "slight" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Art Unit: 1754

- c) Claim 8 does not particularly point out and distinctly set forth what the atmospheric air is introduced into.
- d) Claim 9 does not particularly point out and distinctly set forth what the oxides are recycled back to. The oxides are recycled. . . to where?
- e) Claim 9 is confusing because it appears to erroneously label the "nuclear fuel substances" as the actinide oxides, whereas the specification (i. e. the figure) appears to label the "nuclear fuel substances" as nuclear fuel. A clear line of demarcation should be made in claims 1 and 9 between the actinide oxides and the feed nuclear fuel.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 1754

The person having ordinary skill in the art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in this application reasonably reflect this level of skill.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the English abstract of JP 2001-108,792 A (hence "JP-792").

JP-792 discloses a method for separating actinide oxides from molten metal, comprising:

Transferring molten metal to a partial-oxidation melting furnace;

Injecting an oxidizing gas through the molten metal so that the oxidizing gas oxidizes the actinides into actinide oxides, and

Solidifying the molten metal whereby the actinide oxides are separated from the metals.

The difference between the applicants' claims and JP-792 is that the applicants' claims call for treating steel-based metal wastes (whereas JP-792 treats "metallic members"), however it is submitted that this difference would have been obvious to one

Art Unit: 1754

of ordinary skill in the art at the time the invention was made because it is reasonably expected that the “metallic members” of JP-792 comprises, in fact, the same “steel-based metal” set forth in the applicants’ claim 1 since the waste metals appear to be contaminated with the same actinides.

The difference between the applicants’ claim 1 and JP-792 is that the applicants’ claim 1 also treats “nuclear fuel substances” (in addition to contaminated steel) whereas JP-792 broadly discloses the treatment of “metallic members”, however it is submitted that this difference would have been obvious to one of ordinary skill in the art at the time the invention was made because the broad disclosure of radioactive “metallic members” disclosed in JP-792 fairly suggests that *any* radioactive metallic member could be treated – to include the “nuclear fuel substances” of the applicants’ claim 1.

The difference between the applicants’ claims and JP-792 is that JP-792 does not expressly recite that the separated actinide oxides are recycled, as set forth in applicants’ claim 9, however it is submitted that this difference would have been obvious to one of ordinary skill in the art at the time the invention was made because it is routine and conventional to thriftily recycle valuable substances back into the process where they can be further used, rather than throwing them away.

Claims 3 and 4 have not been rejected under either 35USC102 or 35USC 103 because JP-792 does not teach or suggest the suppression of a percentage content of aluminum.

Art Unit: 1754

The following references, which are indicative of the state of the art, are made of record:

U. S. Patent 6,010,671 disclosing a process for the selective recovery of uranium from sludge, and

U. S. Patent 4,265,861 disclosing a method for reducing radioactive waste and recovering uranium from it.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy C. Vanoy whose telephone number is 571-272-8158. The examiner can normally be reached on Mon-Fri 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Timothy C Vanoy*  
Timothy C Vanoy  
Patent Examiner  
Art Unit 1754



Application/Control Number: 10/632,791  
Art Unit: 1754

Page 8

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